IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier version and listings.

1. (currently amended): A color ink-jet recording apparatus using a black recording head that ejects black ink on the basis of black image data and a color [[a]] recording head that ejects color ink on the basis of color image data, the color ink permeating through a recording medium at a higher speed than the black ink, said apparatus comprising:

control means for controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform ~~a plurality of~~ N (N being an integer equal to or greater than 2) recording scans in the same pixel; ~~and~~

data generating means, which, for each of the recording heads, generates image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording scans and N mask patterns for color image data corresponding to the N recording scans, so that black image data corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N the recording scans; and

ink ejecting means for ejecting the black ink and the color ink from the black recording head and the color recording head during each of the recording scans on the basis of the data allotted to each of the recording scans by said generating means,

wherein total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and

an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being (100/N)%, and an allotment rate of the mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate, and

~~greater than an allotment rate of the mask pattern for the color image data used in that one recording scan, and~~ an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate ~~smaller than an allotment rate of the mask pattern for the color image data used in the latter recording scan~~.

2. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein mask patterns having different allotment rates are used as the mask patterns for the black image data and color image data.

3. - 5. (canceled).

6. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein when a black image is to be formed in said predetermined area, before or after the black ink is caused to impact the recording medium, at least one of the plural types of color ink is caused to impact locations onto which the black ink is ejected.

7. (previously presented): A color ink-jet recording apparatus according to claim 1, further comprising a thinning means, which thins the black image data at a predetermined thinning rate and causes the plural types of color ink to impact portions of the recording area in which the black image data has been thinned.

8. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein at least one of the plural types of color ink is reactive and tends to cause the black ink to solidify or cohere when contacting with the black ink.

9. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein said recording heads execute recording only during scans in one of the forward and backward scanning directions, and in the scanning direction in which the recording is carried out, said color recording heads are arranged in front of said black recording head.

10. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein if said recording heads carry out recording in both the

forward and backward scanning directions, then during the first recording scan, the color image data has a higher allotment rate than the black image data.

11. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein the plural color ink types include cyan, magenta, and yellow ink.

12. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein said recording heads apply thermal energy to generate bubbles in the ink so that energy generated by the bubbles causes the ink to be ejected.

13. (currently amended): A color ink-jet recording method using a black recording head that ejects black ink on the basis of black image data and a color recording head that ejects color ink on the basis of color image data, the color ink permeating through a recording medium at a higher speed than the black ink, the method comprising the steps of:

controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform ~~a plurality of~~ N (N being an integer equal to or greater than 2) recording scans in the same pixel;

for each of the recording heads, generating image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording scans and N mask patterns

for color image data corresponding to the N recording scans, so that black image data corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N the recording scans; and

ejecting the black ink and the color ink from the black recording head and the color recording head during each of the recording scans on the basis of the data allotted to each of the recording scans in said generating step,

wherein total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and

an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being (100/N)%, and an allotment rate of the mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate, and

~~greater than an allotment rate of the mask pattern for the color image data used in that one recording scan, and~~ an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate ~~smaller than an allotment rate of the mask pattern for the color image data used in the latter recording scan~~.

14. - 17. (canceled).

18. (previously presented): A color ink-jet recording method according to claim 13, wherein when a black image is to be formed in the aid predetermined area, before or after the black ink is caused to impact the recording medium, at least one of the plural types of color ink is caused to impact locations onto which the black ink is ejected.

19. (previously presented): A color ink-jet recording method according to claim 13, further comprising a thinning step, which thins the black image data at a predetermined thinning rate and causes the plural types of color ink to impact portions of the recording area in which the black image data has been thinned.

20. (previously presented): A color ink-jet recording method according to claim 13 , wherein at least one of the plural types of color ink is reactive and tends to cause the black ink to solidify or cohere when contacting with the black ink.

21. (canceled).

22. (previously presented): A color ink-jet recording method according to claim 13, wherein if the recording heads carry out recording in both the forward and backward scanning directions, then during the first recording scan, the color image data has a higher allotment rate than the black image data.

23. and 24. (canceled).

25. (currently amended): A method of processing image data used in a color ink-jet recording apparatus using a black recording head that ejects black ink on the basis of black image data and a color recording head that ejects color ink on the basis of color image data, the color ink permeating through a recording medium at a higher speed than the black ink, said method comprising the steps of:

controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform ~~a plurality of~~ N (N being an integer equal to or greater than 2) recording scans in the same pixel; and

for each of the recording heads, generating image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording scans and N mask patterns for color image data corresponding to the N recording scans, so that black image data corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N the recording scans,

wherein total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and

an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being (100/N)%, and an allotment rate of the

mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate, and

~~greater than an allotment rate of the mask pattern for the color image data used in that one recording scan, and~~ an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate ~~smaller than an allotment rate of the mask pattern for the color image data used in the latter recording scan~~.

26. (currently amended): A program for executing image processing on image data used in a color ink-jet recording apparatus using a black recording head that ejects black ink on the basis of black image data and a color recording head that ejects color ink on the basis of color image data, the color ink permeating through a recording medium at a higher speed than the black ink, the program comprising the steps of:

controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform ~~a plurality of~~ N (N being an integer equal to or greater than 2) recording scans in the same pixel; and

for each of the recording heads, generating image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording scans and N mask patterns for color image data corresponding to the N recording scans, so that black image data

corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N the recording scans,

wherein total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and

an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being (100/N)%, and an allotment rate of the mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate, and

~~greater than an allotment rate of the mask pattern for the color image data used in that one recording scan, and~~ an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate ~~smaller than an allotment rate of the mask pattern for the color image data used in the latter recording scan~~.

27. (previously presented): A computer-readable storage medium storing the program set forth in claim 26.

28. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein the allotment rate of the mask pattern for the black image

data used in one recording scan of two recording scans among the plurality of recording scans is different from the allotment rate of the mask pattern for the black image data used in the other recording scan of the two recording scans.

29. (previously presented): A color ink-jet recording apparatus according to claim 1, wherein the allotment rate of the mask pattern for the color image data used in one recording scan of two recording scans among the plurality of recording scans is different form the allotment rate of the mask pattern for the color image data used in the other recording scan of the two recording scans.

30. (currently amended): A color ink-jet recording apparatus using a black recording head that ejects black ink on the basis of black image data and a color recording head that ejects color ink on the basis of color image data, the color ink permeating thorough a recording medium at a higher speed than the black ink, said apparatus comprising:

control means for controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform ~~a plurality of~~ N (N being an integer equal to or greater than 2) recording scans in the same pixel; and

data generating means, which, for each of the recording heads, generates image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording

scans and N mask patterns for color image data corresponding to the N recording scans, so that black image data corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N the recording scans,

wherein total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and

an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being (100/N)%, and an allotment rate of the mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate, and

~~greater than an allotment rate of the mask pattern for the color image data used in that one recording scan, and~~ an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate ~~smaller than an allotment rate of the mask pattern for the color image data used in the latter recording scan~~.